

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended)

A solid-state image pickup apparatus comprising:

an image pickup section; and

a signal feeding section;

said image pickup section comprising:

photosensitive cells for photoelectrically transducing incident light representative of a scene, said photosensitive cells being arranged bidimensionally, each being in such position that each of said photosensitive cells is shifted in position from adjoining ones of said photosensitive cells in a horizontal and a vertical direction, for photoelectrically transducing incident light;

a color filter having R (red), G (green) and B (blue) color filter segments for separating colors of the incident light, each of the color filter segments being positioned in front of a particular one of said photosensitive cell cells in a direction of the incident light incidence, for separating colors of incident light representative of a scene, said R, G and B color filter segments each and being arranged in a vertical stripe pattern in which the segments of a same color form a column in the vertical direction;

transfer electrodes, each being assigned to a particular one of said photosensitive cell cells, for reading out a signal charge generated by said particular photosensitive cell, said transfer electrodes being assigned to vertical

transfer paths and a horizontal transfer path substantially perpendicular to the vertical transfer paths; and

control circuitry for sequentially performing preliminary pickup and actual pickup, which reads all of the signal charges out of said photosensitive cells, and executing digital signal processing with ~~resulting~~ signals resultant from the signal charges read out;

said signal feeding section feeding transfer timing signals for transferring the signal charges generated by ~~only part ones~~ of said photosensitive cells arranged which are positioned on ~~odd-numbered columns~~ or even-numbered ones of the columns to the vertical transfer paths via said transfer electrodes associated with ~~said part of~~ said photosensitive cells on the odd-or even-numbered columns, ~~the~~ vertical drive signals for transferring ~~said the~~ signal charges along said vertical transfer paths toward ~~the~~ said horizontal transfer path, and horizontal drive signals adjusted in timing for transferring the signal charges along said horizontal transfer path while maintaining a color of ~~an~~ individual the signal charge charges.

Claim 2. (Original)

An apparatus in accordance with claim 1, wherein in the event of the preliminary pickup said signal feeding section output said horizontal drive signals such that a well is formed in each packet of said horizontal transfer path adjoining

a packet storing the individual signal charge at the same time as a well formed in said packet storing said individual signal charge.

Claim 3. (Original)

An apparatus in accordance with claim 1, wherein said signal feeding section outputs said horizontal drive signals such that a range of said horizontal transfer path driven in a same phase and derived from an electrode structure of said horizontal transfer path is doubled.

Claim 4. (Original)

An apparatus in accordance with claim 3, wherein when said horizontal transfer path has a four electrode structure, said signal feeding section outputs said horizontal drive signals such that two phases are combined into a single phase.

Claim 5. (Currently Amended)

A method of reading signal charges-generated by photosensitive cells, which are arranged bidimensionally in such positions that ~~and~~ each of said photosensitive cells is shifted in position from adjoining ones of said photosensitive cells in a horizontal and a vertical direction for photoelectrically transducing incident light of particular separated color ~~incident thereto~~ representative of a scene, in a particular manner for preliminary pickup and

actual pickup, which reads all of ~~said~~ the signal charges out of said photosensitive cells for recording ~~said~~ the signal charges, said method comprising the steps of:

(a) positioning in front of said photosensitive cells in a direction of the incident light ~~incidence~~ a color filter, ~~in~~ which has color filter segments of three primary colors R, G and B each are for separating colors of the incident light and arranged in a vertical stripe pattern in which the segments of same color form a column in the vertical direction, for separating incident light, and forming transfer electrodes, each ~~being of which~~ is assigned to a particular one of the photosensitive ~~cell~~ cells for reading out a signal charge generated by said particular photosensitive cell, said transfer electrodes respectively contacting said photosensitive cells;

(b) generating drive signals for reading out the signal charges generated by said photosensitive cells and representative of an image picked up;

(c) rendering conductive, during the preliminary pickup, ~~only~~ the transfer electrodes associated with ~~part of said~~ ones of the photosensitive cells ~~arranged which are positioned on odd-numbered columns or even-numbered ones of the columns~~ ~~conductive by using said~~ in response to the drive signals to thereby reduce pixels in the horizontal direction;

(d) transferring the signal charges read out in said step (c) in the vertical direction ~~by using said~~ in response to the drive signals; and

(e) transferring the signal charges having transferred in ~~the vertical~~ direction said step (d) in the horizontal direction perpendicular to said vertical direction ~~by adjusting~~ with a timing of ~~said~~ the drive signals being adjusted.

Claim 6. (Original)

A method in accordance with claim 5, wherein said step (b) comprises the step (f) of generating, in the event of the preliminary pickup, horizontal drive signals such that a well is formed in each packet horizontally adjoining a packet storing an individual signal charge at the same time as a well formed in said packet storing said individual signal charge.

Claim 7. (Original)

A method in accordance with claim 5, wherein said step (e) comprises the step (g) of generating said drive signals such that a range of a same phase is doubled in the horizontal direction.

Claim 8. (Currently Amended)

A method in accordance with claim 7, wherein, when ~~two~~ four-phase drive signals are used for usual horizontal transfer, said step (e) comprises the step (h) of generating said drive signals such that two phases are combined into a single phase.